OpenSAT, An Open Source Based Satellite Design Data Architecture with API Design and Management Plugins, Phase I
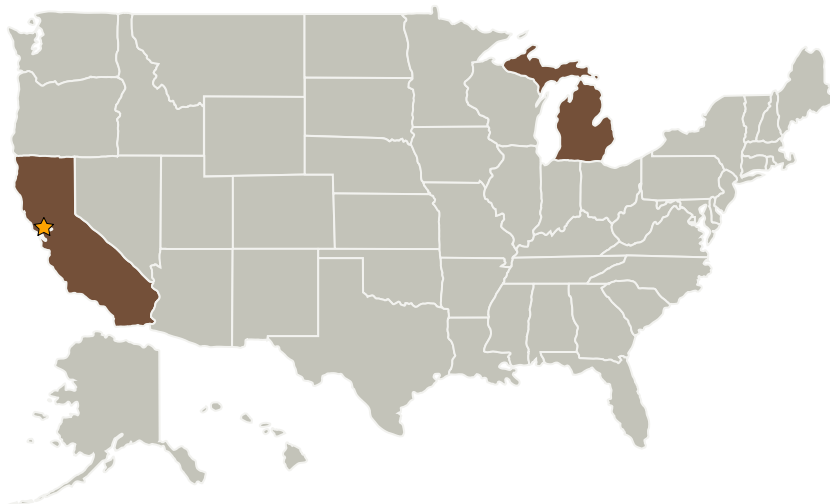
Completed Technology Project (2008 - 2008)

Project Introduction

Satellite design encompasses a multitude of steps from concept to flight. Mission specification to flight can take several years, depending on the scope, requirements and budget of the mission. The process also requires a wide range of design and management tools, with limited consistency data interchange capability, and a lack of coherency. Detailing the relationships between the satellite configuration, inventory control systems, life cycle management, design, analysis and test data is difficult at best. No tool exists that meets these needs for the general satellite design, system engineering and integration process. Sci_Zone is proposing our innovative Satellite Design Automation architecture SatBuilder Designer, in conjunction with the OpenSAT open database architecture to meet this need. OpenSAT seamlessly integrates existing detail design tools with SatBuilder Designer, as well as databases tracking requirements, components and inventory, with the final configuration of the satellite. SatBuilder Designer, an AI based toolset, provides for rapid design via design wizards and integration to existing design tools; it provides coherency between a range of applications and data sets. OpenSAT stores and distributes supporting satellite design, configuration, mission and test data from a centralized database server and can distribute the data across multiple platforms and via the internet.

Primary U.S. Work Locations and Key Partners

OpenSAT, An Open Source Based Satellite Design Data Architecture with API Design and Management Plugins, Phase I

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Organizations Performing Work	Role	Type	Location
⭐Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
sci_Zone, Inc.	Supporting Organization	Industry Women-Owned Small Business (WOSB)	Holland, Michigan

Primary U.S. Work Locations	
California	Michigan

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Andrew D Santangelo

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  └ TX11.5 Mission Architecture, Systems Analysis and Concept Development
    └ TX11.5.2 Tools and Methodologies for Performing Systems Analysis